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Deploying a humanitarian–development–peace nexus approach

Exploring, strengthening and reviving dryland ecosystems

Forestry discussion paper

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Deploying a humanitarian–development–peace nexus approach

Exploring, strengthening and reviving dryland ecosystems

Food and Agriculture Organization of the United Nations (FAO)
Consortium of International Agricultural Research Centers (CGIAR)
Cooperative for Assistance and Relief Everywhere (CARE)

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Working on making a passage for water coming from the tank connected to the solar water pumps provided by FAO. Yemen.
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Foreword

After over a year living with the COVID-19 crisis, there is a greater appreciation globally of the crucial role that forests, including dryland forests and agrosilvopastoral systems, play in combating a range of health, environmental and socioeconomic issues from zoonotic diseases to climate change to conflict. The launch of the United Nations (UN) Decade on Ecosystem Restoration in June 2021 shines a spotlight on the change needed – a shift from destructive – to restorative and resilient practices. The World Bank is already forecasting that in Sub-Saharan Africa, the collapse of ecosystem services will result in an annual 9.7 percent contraction of Gross domestic product (GDP) by 2030. Every single year, we lose ecosystem services worth more than 10 percent of our global economic output. Degradation is already affecting the well-being of an estimated 3.2 billion people – i.e. almost 40 percent of the world's population.

As outlined in FAO's recent State of Food Security and Nutrition in the World in 2021 (SOFI 2021) report, the urgency of the action needed is unparalleled in human history due to the combined impacts of COVID-19, climate change and conflict. Nearly 2.37 billion people did not have access to adequate food in 2020 – an increase of 320 million people in just one year. This means that this is a battle that cannot be fought on one front, but requires a systems approach, along the lines of what is being called for at the UN Food Systems Summit 2021. Restoring 350 million hectares of degraded or deforested landscapes by 2030 could sequester between one and three billion tonnes of CO_2 per year. It could also generate about USD 170 billion per year in other benefits from ecosystems.

While there is a growing body of literature and documented experience outlining how a humanitarian–development–peace (HDP) nexus approach can contribute to better, more lasting outcomes, there is a lack of consensus on exactly what the key attributes of success are in applying this approach in varying contexts. The UN Food Systems Summit provides an opportunity to build on the momentum being generated for food system transformation by developing the evidence base for the best models, so as to achieve the needed transformation. FAO, CARE International and CGIAR are contributing to this transformation by pooling their experience and sharing lessons learned, in order to identify key areas to explore further in addressing the interlinked issues of climate change, land degradation and conflict in dryland ecosystems.

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"Deploying a humanitarian–development–peace nexus approach" is a Forestry discussion paper, jointly developed by FAO, CGIAR and CARE, on the topic of exploring, strengthening and reviving dryland ecosystems.

The Paper's interdisciplinary approach reflects the diversity and wealth of expertise of the project team members. Fidaa F. Haddad from FAO's Forestry Division and Julius Jackson from FAO's Conflict & Peace Unit played an instrumental role in developing the Discussion Paper by leading the project and ensuring technical accuracy. The interactive map, representing the complex case studies selected for this paper, was produced thanks to the expertise of Matías Bosio, and the Global Forest Resources Assessment (FRA) Team of FAO's Forestry Division.

Sheri Lim, Lead Advisor on Resilience and Gender, and Hayley Capp, Climate Change and Resilience Knowledge and Learning Advisor, along with Nicola Ward, Learning and Evidence Specialist, contributed on behalf of CARE, through case study analysis and drawing the links between climate change adaptation, gender and humanitarian and resilience benefits. CGIAR's Climate Security team, consisting of Peter Läderach, Lead CGIAR Climate Security, Grazia Pacillo, Senior Economist, and Theresa Liebig, Agronomist, provided additional support with case study input and analysis, flagging issues and contributing to the key themes.

Elizabeth Beall provided technical support and input throughout the drafting process of this paper, Alex Chepstow-Lusty provided technical editing to the final report, and Roberto Cenciarelli produced the graphic layout of the publication. The joint paper, based on the premise that humanitarian, development and peace efforts are complementary and mutually reinforcing, contributes evidence that integrated responses offer the most effective way to tackle human security and environmental sustainability in crisis- and conflict-affected contexts.

The Discussion Paper contributes to developing an FAO position for better understanding the links between climate change and conflict, in order to mitigate their risks and impacts, with particular attention to dryland forests and agrosilvopastoral areas.

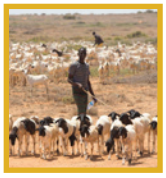
Last but not least, the three organizations would like to give a special thanks to all those involved in providing case studies from the field, feedback and lessons learned for truly bringing this paper to life and to Elodie Lluch who coordinated the selection and summaries of the case studies

Angola

The four key themes for successfully deploying a humanitarian–development–peace (HDP) nexus approach in dryland forests and agrosilvopastoral areas

Applying an HDP nexus approach to address climate change and conflict impacts in dryland ecosystems can improve outcomes for food and nutrition security, and ensure long-lasting success for environmental sustainability and human security.

Four key themes emerged from the analysis of applying an HDP nexus approach in dryland ecosystems:



Prioritise the inclusion of vulnerable individuals including pastoralists, internally displaced persons (IDPs), refugees, migrants, women and children when designing and implementing projects and programmes – not only as beneficiaries – but also with decision-making roles and longer-term leadership positions within local communities.

Photo credit: ©FAO/Karel Prinsloo

Make conflict sensitivity a core aspect from beginning to end of implementing a HDP nexus approach in dryland ecosystems to ensure that measures reduce the risk and incidence of conflict rather than exacerbating them.

Photo credit: ©FAO/Albert Gonzalez Farran

Integrate measures to facilitate climate change adaptation and food and nutrition security towards ensuring environmental sustainability and overall human security.

Photo credit: ©FAO/Seyllou Diallo

Establish monitoring systems and procedures at the start of HDP nexus programmes, and use monitoring tools to enhance decision-making around resource management to better track and target measures over time with changing conditions and reduce impacts.

Photo credit: ©FAO/Andres Murillo

As part of the UN Food Systems Summit 2021, these interconnected themes can all contribute to game-changing solutions in dryland ecosystems for the humanitarian–development–peace nexus approach. Nevertheless, further analysis should reveal how these themes interact and that the benefits achieved can potentially be much greater than the sum of the individual themes simply combined.

Somalia

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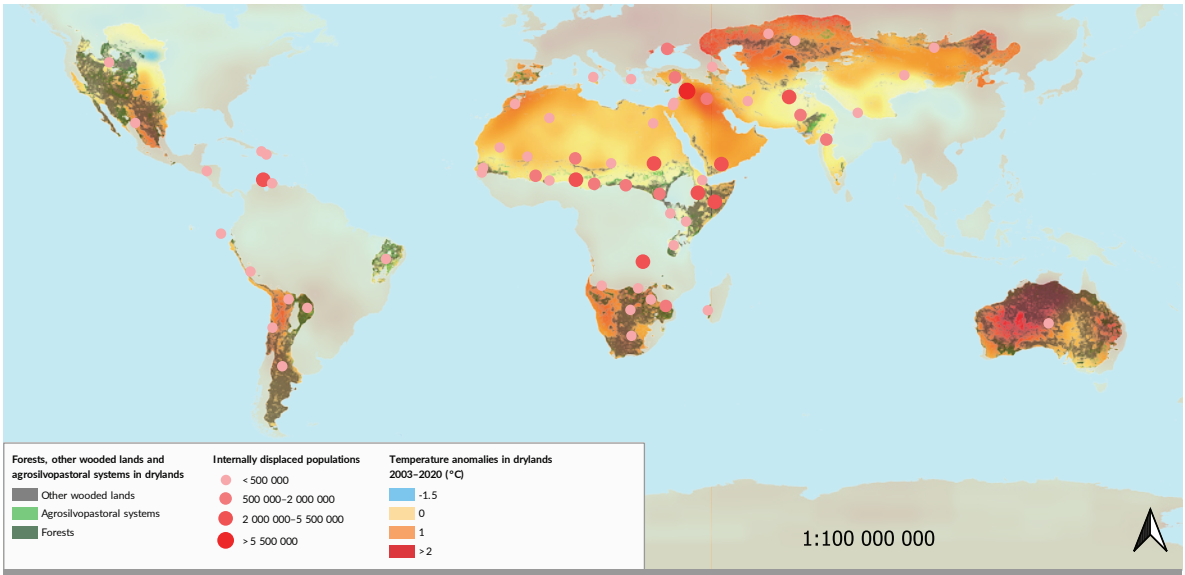
Drylands at the crossroad between climate change and conflict

The importance of dryland ecosystems has often been overlooked, but they are vital for a wide range of reasons – from ensuring food security to combating climate change. Without better resilience, up to 3.8 billion people across climate-vulnerable global drylands will be deprived of their livelihoods if the effects of intensifying climate change continue as predicted (Icarda, 2020). Even if climate change follows only the currently anticipated trajectory, 10 percent of total economic value could be lost worldwide by 2050 (Swiss Re Institute, 2021). However, the impacts of climate change shall be much more extreme in dryland ecosystems, where the economy – and food and nutrition security – are intrinsically linked with agriculture.

Drylands are currently home to about 25 percent of the global population, contain 50 percent of the world's livestock, 27 percent of the world's forests (FAO, 2019a), store 30 percent of the world's soil organic carbon, and supply about 60 percent of the world's food production (IUCN, 2018). However, as important as drylands are for food security and mitigating climate change, they are also characterised by variable precipitation, climate variability and water scarcity. The effects of climate change are exacerbating these conditions with longer periods of drought, accelerated desertification, and causing impacts on biodiversity and vegetation cover that reduce soil fertility – all of which undermine food and nutrition security. Population growth coupled with expansion of drylands due to climate change could increase the number of people living in challenging conditions by up to 70 percent by 2030 (World Bank, 2017). Therefore, climate change can act as a conflict threat multiplier, whereby already fragile ecosystems and local communities are pushed beyond coping capacity, resulting in increasing tensions related to natural resource access and use[1]. Key vulnerable groups in dryland ecosystems include pastoralists and agro-pastoralist households, as well as internally displaced persons, refugees and migrants resulting from the impacts of climate change and conflict, with women and children particularly at risk.

While climate change is increasingly recognized as a conflict threat multiplier, it does not inevitably lead to conflict, but exacerbates land and water scarcity for food systems, which can lead to grievances and conflicts (IDRC, 2021). Hunger increases significantly where there is the combination of conflict, climate extremes, economic downturn and marked income inequality (FAO, 2021). However, the links between climate change, resource access and the distribution of conflicts are often indirect and connected to other factors, such as political, economic and social issues. Wars and conflicts are concentrated disproportionately in dryland regions, while at the same time countries experiencing armed conflicts are disproportionately affected by climate variability and extremes. These are two sides of the same coin and

[1] IPCC. Climate change and land. https://www.ipcc.ch/srccl/



Source: United Nations Geospatial (2021), modified with data from ESA (2017); IDMC (2020); GISTEMP Team (2021). Modified by FRA Team, August 2021

Figure 1: The interconnected nature of temperature anomalies and internal displacement of populations in dryland forests and other wooded lands and associated agrosilvopastoral areas

inextricably interlinked. Sixty percent of the 20 countries considered to be most vulnerable to climate change (ND GAIN Country Index[2]) are affected by armed conflict, while 14 of the 34 countries in food crisis experienced the double burden of conflict and climate shocks (World Food Programme, 2021). Conflicts and their impacts limit the adaptive capacity of people, systems and institutions, which are needed even more urgently as a result of the impacts of climate change (International Crisis Group, 2020). Climate-induced population displacement is triggered by direct physical harm from extreme weather events or slow-onset impacts, but also by indirect consequences exacerbating food insecurity and conflict over natural resources and land rights (CARE, 2020). The combined impacts of conflict and climate change force people to move, potentially contributing to new cycles of tension and unsustainable natural resource use in new areas. As climate change worsens, the potential for forced displacement and migration increases, with more people adding pressure on host communities and a higher likelihood that tensions rise.

Countries affected by conflict and fragility were those left furthest behind by the Millennium Development Goals, which the world pledged not to repeat with the subsequent adoption of the Sustainable Development Goals (SDGs) in 2015 (International Dialogue on Peacebuilding and Statebuilding, 2016). The commitments to reduce suffering and deliver better for people caught in humanitarian crises have been underscored in global fora including the first World Humanitarian Summit in 2016, which also highlighted the need to improve cohesion among agencies and efforts addressing humanitarian issues, development and peace. With the recent launch of the UN Decade on Ecosystem Restoration (2021–2030), there is the opportunity through improved cohesiveness to bring together humanitarian assistance, development cooperation and peacebuilding, i.e. the humanitarian–development–peace nexus approach or policy concept for tackling the root causes of conflict – as part of the focus to halt the degradation of ecosystems and restoring them to build resilience, while reducing vulnerability and increasing the ability of systems to adapt to daily threats and extreme events.

[2] https://gain.nd.edu/our-work/country-index/

> Out of the 33.4 million newly displaced people in 2019, 70 percent were due to climate-related disasters. Over the past 10 years (2008–2018), 90 percent of the people displaced by disasters (approximately 23 million people per year) have had weather-related triggers (CARE, 2020)

Given the importance of dryland ecosystems, the growing impacts of climate change and conflict in these regions, as well as the renewed focus on facilitating long-term landscape restoration – this paper aims to promote the discussion of how a HDP nexus approach can be effectively applied to address these challenges. It also highlights where further analysis is needed to support decision-makers plan and implement policies and interventions.

Colombia

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Exploring solutions through a HDP nexus approach

As conflicts grow increasingly protracted, climate-related shocks more intense, and resources in dryland regions become scarcer, there persists a cycle of fragility, vulnerability and the exacerbation of conflict. In the short term, while humanitarian and peace-related interventions are often urgent, longer-term investment is needed to provide durable solutions. This means that humanitarian, development and peace interventions must take place in a more coherent manner (Oxfam, 2019). This understanding has grown in acceptance, referred to as a **humanitarian–development–peace nexus** (ICVA, 2015), which aims to address the interlinkages and reduce vulnerability before, during and after crises. The HDP nexus approach builds on years of collaboration across humanitarian and development interventions, including 'linking relief and development', the resilience agenda,[3] disaster risk reduction, and the sustaining peace agenda since 2016 (OECD, 2017; FAO, 2018).

The key to applying a HDP nexus approach is considering how each of the components can be combined to strengthen the overall approach and outcomes rather than compartmentalising the areas. For example, many of the case studies presented herein combine addressing immediate needs (humanitarian), while empowering people to build capacity to address new challenges (development), in ways which account for existing and potential tensions within the local context (peace) – in order to deliver more lasting and effective outcomes.

With initial experience of a HDP nexus approach across a wide range of geographies and by various institutions, it is now possible to start assessing lessons learned and what may differ depending on the specific geographic and ecosystem contexts. Given the importance of drylands, yet their vulnerability to conflict and climate change, it is essential to understand how an HDP nexus approach can facilitate practical and enduring solutions.

Insights on the ground: learning from case studies

The lessons in this discussion paper are based on a range of case studies gathered from FAO, CGIAR and CARE in contexts that confront the multidimensional nature of climate-and conflict-related impacts in drylands. The paper aims to shed light on elements that support an HDP nexus approach so as to minimise the conflict threat multiplier of climate change in dryland ecosystems where conflict is possible, present or latent.

Eighteen case studies are presented here (Table 1), highlighting key lessons learned and reflecting different geographies and stages of intervention. While the case studies reveal a wide array of lessons, the varying form and status of the projects have not allowed strong findings to emerge yet, and thus to contribute to decisive recommended actions. Nevertheless, it is important to note that many of the case studies were not designed with an HDP nexus approach in mind, but have been presented due to the fact that they are able to demonstrate positive impacts across humanitarian, development and peace objectives, so providing valuable lessons for policymakers and programming.

[3] http://www.fao.org/sustainable-development-goals/overview/fao-and-the-2030-agenda-for-sustainable-development/resilience/en/

South Sudan

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Instead, lessons emerging from the case studies can be classified across four key themes, which are useful for decision-makers to consider in delivering long-term effective solutions. All the themes are interlinked and are essential in any humanitarian or development context. However, our analysis focuses on why these themes are particularly to be addressed in conflict situations in dryland ecosystems. Many of the themes are aligned with FAO's pathways for contributing to local peace, with learning shared on how to adapt these pathways to the specifics of addressing the impacts of conflict and climate change in dryland ecosystems. Key themes for decision-makers to consider in applying an HDP nexus approach when addressing the intersection of climate change and conflict in dryland regions are:

- **Inclusion**: adapt interventions to the specific needs and interests of the most vulnerable (e.g. internally displaced persons [IDPs], women, indigenous people, youth) and meaningfully involve them in governance processes and structures.
- **Conflict sensitivity**: integrate conflict sensitivity approaches (based on context/conflict analysis) to avoid exacerbating or creating conflict.
- **Climate/food security**: integrate climate change adaptation and food and nutrition security measures towards ensuring environmental sustainability and overall human security.
- **Monitoring**: monitor climate information to plan for and reduce impacts.

Table 1: Case studies and illustration of key themes

Country/ Region	Org	Project name	Inclusion	Conflict-sensitivity	Climate/ food security	Monitoring
Bangladesh	FAO	Restoring degraded land in Rohingya refugee camps in Cox's Bazar				
Bolivia (Plurinational State of)	FAO	The creation of Nembi Guasu and its importance for the mitigation of climate change, the fundamental step for the great conservation corridor				
Colombia	FAO	Anticipatory action interventions to mitigate the effects of drought and migration on food security in Colombia				
Colombia	CGIAR	Implementing sustainable land use systems to contribute to forest conservation, climate protection (REDD+) and the peace-building process				
Democratic Republic of the Congo	CARE	Tufaidike Wote				
East Africa	CGIAR	Resource recovery and reuse (RRR) in refugee settlements				
Egypt, Jordan, Lebanon	CGIAR	ReWater MENA: more and safer water reuse in Middle East and North Africa				
Ethiopia	CGIAR	Reversing Land Degradation in Africa by Scaling-up Evergreen Agriculture				
Ethiopia	CGIAR	Restoration of degraded land for food security and poverty reduction in East Africa and the Sahel: taking successes in land restoration to scale				
India	FAO	Restoring lands and local livelihoods by implementing the Forest Rights Act in the states of Maharashtra and Odisha				
Mali	CARE	Harande				
Niger	CARE	Adaptation Learning Programme (ALP)				

Country/ Region	Org	Project name	Inclusion	Conflict-sensitivity	Climate/ food security	Monitoring
Niger	CARE	Reducing the suffering of people affected by the cross-border conflict in the Diffa region (RESPECT)				
Senegal	CGIAR	The effectiveness of co-production in promoting uptake of climate information by smallholder farmers				
Somalia	CARE	Reversing environmental degradation in a fragile context "your environment is your life": The case of Puntland State (Regreening Africa in Puntland State Somalia)				
Somalia	CARE	Somalia Resilience Program (SomRep)				
Uganda	CARE	Strengthening Resilience and Promoting Inclusive Governance Program (STRENPO)				
Yemen	FAO	Towards risk-informed response to natural disasters in conflict-affected communities through strengthening the role of women in water conflict resolution and disaster risk reduction				

An underlying thread emerging from all of the case studies **is the importance of strong local governance and building capacity of local government institutions** to deliver across the four themes. Low confidence in state institutions and humanitarian/development interventions to fully address the needs of communities reduces the ability of the state and international organisations to mitigate tensions and strengthen social cohesion. Therefore, assessing the existing governance structures, credibility and efficacy is a preliminary step to any HDP nexus-focused intervention. Building the capacity of these institutions generally should be combined with specific capacity to follow the four themes as outlined below.

Inclusion and attention to the most vulnerable

Climate change and conflict affect everyone in dryland regions where they are occurring, but not in the same way (Abel *et al.*, 2021). Conflict can escalate violence against women and youth, including human rights abuses, such as torture and sexual violence (CARE, 2013; United Nations, 2021). Climate impacts – increased drought, floods, etc. – have exacerbated conflict by aggravating underlying tensions including weak governance and social cohesion, both vertical and horizontal, and adding pressure to strained natural resource management in dryland ecosystems as a result of increasing climate variability. Conflict also disrupts access to essential services, including sexual and reproductive health services for women and schooling for youth. Individuals, particularly women, youth, refugees and vulnerable populations often do not feel heard or have the opportunity to participate meaningfully in decision-making, which means that their needs are often not met. Therefore creating the space for individuals to be heard and part of decision-making can help to also create an environment for local conflict-resolution and peaceful shared decision-making, while also facilitating a stronger connection between local authorities and community members.

The analysis of the case studies revealed that women, youth and indigenous peoples faced greater barriers to access land and resources and were more frequently left out of decision-making and governance structures – thus further limiting their access to resources. In many cases, conflict is exacerbated within the household due to a lack of resources. By empowering women and involving them in conflict prevention and resolution, while facilitating the development of their livelihoods, multiple sources of tension can be reduced. For example, in **the FAO India project on Restoring lands and local livelihoods by implementing the Forest Rights Act in the states of Maharashtra and Odisha,** the concept of inclusion came through both in terms of working with local communities to build their capacity to execute their forest rights, and also the inclusion of local government institutions to play a role in further empowering communities. With communities empowered and the capacity of local government and NGOs strengthened to support communities, overall forest management has improved resulting in fewer resource-based conflicts and better livelihoods. In **CARE's Mali case, Harande,** the establishment of community and village land commissions, community development committees (CDCs), complaint committees and village agroforestry committees, which are accountable to the communities, has resulted in lower incidences of conflict between farmers and pastoralists over natural resources in agrosilvopastoral regions impacted by drought. The reduced incidence of conflict is due in part to the economic benefits achieved through higher productivity and agricultural returns, and in part due to the more inclusive approach to decision-making regarding resource use.

1

Working together for everyone's benefit in Democratic Republic of Congo

The provinces of North and South Kivu are among those most affected by repeated violence in the eastern part of the Democratic Republic of the Congo (DRC) and also some of those most impacted by climate change including heat waves, violent rain, and an increase in drought occurrence. In CARE's project Tufaidike Wote, the use of inclusive community-managed governance mechanisms has enabled greater conflict prevention and resolution, while also fostering women's empowerment. A range of measures were deployed including establishing peace committees, sensitising the communities on the value of women's participation, and building the capacity of women in livelihood skills and conflict resolution. As a result, the project has improved knowledge and practices of transparency, accountability and participation through multiple, inclusive and representative women's community structures. The project also provided agricultural training and improved access to agricultural assets such as seeds and land for those target communities involved in the project, thus improving their resilience to climate change-related shocks and stresses.

Integrating conflict sensitivity in climate and natural resource policy and action

Conflict sensitivity refers to the ability to have a sound understanding of the interaction between the context and project interventions, and to act to minimize the potential negative impacts and maximize the positive impacts of an intervention on conflict. What may seem like similar interventions can either have positive or negative impact(s) on conflict dynamics. For example, the provision of support to improve irrigation infrastructure and water management could, on the positive side, increase the amount of water available and reduce competition during droughts. On the negative side, the irrigation infrastructure could reduce available water for downstream communities, thus contributing elsewhere to already rising tensions resulting from climate change. Conflict sensitivity would mean assessing the impact of the intervention on all affected stakeholders, and assessing the potential conflict and power dynamics when designing and installing the irrigation infrastructure (FAO and Interpeace, 2020). Interventions that are not conflict-sensitive risk reducing the effectiveness of the project, thus reversing the desired impacts of improving food security, livelihoods and resilience, and even exacerbating conflict, violence and instability (FAO, 2019b).

2

Regreening Africa in the Puntland State of Somalia

The Puntland State of Somalia has been experiencing increasing environmental degradation due to both natural causes and human activities resulting from the impact of rainfall shortages and recurrent droughts. Communities in Qardho district, pastoralists with pockets of farmland, are experiencing the deterioration of their livelihoods as a result of the triple nexus of climate change, conflict and environmental degradation. The traditional resource governance institutions, mainly clan-based elders' councils, were widely present in Puntland, but were not functioning well or respected due to the disregard for institutional authority and general perception of impunity. With the overall objective to improve production and productivity of rangelands, it was important to first understand the conflict context and focus attention on the capacity of local government to manage restoration efforts, without exacerbating existing tensions. By developing community by-laws to govern rangeland resources, communities did not have to fully rely on local government and felt ownership over the activities and rules of engagement.

Each of the case studies analysed represents varying stages of conflict and fragility, where it is imperative to understand the specific context and drivers of conflict when designing the related interventions and deciding on the beneficiaries targeted. To carry this out effectively, it is necessary to involve local beneficiaries and actors in the project design process in order to ensure that the specific conflict dynamics are taken into account and addressed in a way that would lead to meaningful outcomes across various stakeholders. For example, in the **FAO Yemen case study**, **Risk-Informed Response to Natural Disasters (RIRND),** it was important to first analyse the historical tensions over water before initiating the design and repair of local water infrastructure. Through interviews with local stakeholders to determine the root causes of the conflict, FAO worked with community representatives to establish water user associations (WUAs), which would make decisions about the design of water infrastructure in conflict-prone areas. The project led to improved capacity within local institutions on conflict-sensitive programme design and inclusive decision-making, and has resulted in greater access to water resources and improved agricultural livelihoods with fewer conflicts.

Integrating measures to facilitate climate change adaptation and food and nutrition security towards ensuring environmental sustainability and overall human security

To tackle the consequences of reduced natural resources in the world´s drylands, in part due to human degradation and in part amplified by increasing climate uncertainty, requires measures to help populations adapt to climate change, including in terms of making food systems more resilient. These fundamental approaches can provide a foundation towards reducing conflict and attaining environmental sustainability and human security. Numerous examples can demonstrate that land degradation in dryland and agrosilvopastoral systems, combined with resource competition as a result of displaced people (climate- or conflict-induced) increases vulnerability and exacerbates the risk of conflict. In peacekeeping or humanitarian interventions, there is often greater attention paid to short-term human security or ensuring immediate protection from violence, without enough consideration of the importance of long-term environmental sustainability in avoiding further conflict and achieving food security.

Managing shared natural resources can serve as a way to create cooperation and address scarcity in a more equitable way. For example, in the **CGIAR's ReWater MENA: more and safer water reuse in Middle East and North Africa project**, CGIAR identified water scarcity as a growing issue of environmental security and one that was increasingly leading to conflict. Informal calculations indicate that water conflicts kill around 4 000 people a year in Yemen (FAO, 2019b). While water scarcity has long been an issue in the region, it was not adequately addressed until it was elevated as an integral aspect of reducing tension on par with human security.

3

Restoring degraded land in Rohingya refugee camps in Cox's Bazar – Bangladesh

In the past five years, there has been a huge increase in the numbers of Rohingya people being displaced, with a massive influx to Bangladesh (more than 742 000 refugees have fled to Bangladesh since August 2017) (UNHCR, 2017) leading to the development of the largest refugee camp in the world in Cox's Bazar, which has put major pressure on the regional landscape. FAO, in close coordination with the Energy and Environment Technical Working Group (EETWG) and associated UN agencies (International Organization for Migration (IOM), World Food Programme (WFP), United Nations High Commissioner for Refugees (UNHCR)), international and national partners such as the Forest Department of the Government of Bangladesh's Ministry of Environment, Forest and Climate Change, and most importantly the local communities and Rohingya refugees, have together brought these degraded lands under a land restoration programme. About 350 hectares of degraded land are now being rehabilitated inside the camps, involving more than 10 000 person-days. Without this intervention – and without the prioritisation of environmental sustainability alongside human security – there would not have been sufficient renewable natural resources to meet requirements for energy and cooking needs. A key success factor was the collaborative inclusive approach to involve various actors at various levels of governance and to deploy key technological resources like remote sensing and geospatial analysis to conduct resource assessments. This initiative is part of the Safe Access to Fuelwood and Energy (SAFE) programme[1], and deployed the use of satellite imagery processing through the cloud-computing platform – System for earth observations, data access, processing and analysis for land monitoring (SEPAL)[2] – and an on the ground assessment of biomass and socio-economic data to inform natural resource management around the refugee camps. These collaborative approaches and technologies can play a major role in facilitating climate change adaptation and supporting food security.

[1] FAO. 2016. SAFE toolbox. Woodfuel assessment in displacement settings. User guide. Rome, FAO. 28 pp. (also available at www.fao.org/3/a-bo563e.pdf)

[2] https://sepal.io

Similarly, the case studies in **CARE's Somalia Resilience Program** have illustrated that implementing programmes, which address environmental sustainability and build resilience in sometimes competing groups of individuals or communities, can foster trust alongside addressing food and nutrition security and enabling climate change adaptation.

Monitor climate and weather information to plan for and reduce impacts

Information services to support decision-making in the face of climate variability offers significant potential to build resilience, enhance food and nutrition security, enable climate change adaptation and can help to mitigate conflict arising from competition over scarce resources and tensions. These services, known as climate information services (CIS) or climate services more generally, are defined as the systematic provision of climate information in support of sector decision-making. The case studies have illustrated that anticipating climatic changes and the impact on natural resources, not only assists communities with absorbing current climate impacts as it gives them enough time to plan and implement responses, but also enables them to become more flexible to future changes. This requires building capacity within communities to have access to information on climate projections and learning how to apply that information in order to adjust livelihood strategies. With climate impacts extremely localised, different communities and people within those communities face different effects and it is important that each community has access to the information relevant to their specific areas and livelihoods.

Monitoring of various indicators can support anticipatory action to address resource constraints before tensions develop. For example, in **FAO's Colombia case, anticipatory action interventions to mitigate the effects of drought and migration on food security in Colombia** – an inter-agency needs assessment carried out by FAO, WFP and Nations Children's Fund (UNICEF) in the northern area of Colombia near the border with Bolivarian Republic of Venezuela – noted: i) increasing food and nutrition insecurity; ii) precipitation forecasts indicating forthcoming drought; and iii) projected movement of Venezuelans as a result of the crisis occurring there. With this information, local decision-makers were able to act to avert a crisis and support peaceful conditions within these communities by establishing inclusive community production centres for rapid crop production, distribution of drought-tolerant seeds and agricultural tools to individual households. In addition, water infrastructure was rehabilitated, while training was provided in agronomic practices and distribution of animal feed. These actions meant that the host communities and migrants had adequate resources to meet food security and nutrition needs.

4

The effectiveness of co-production in promoting greater uptake of climate information by smallholder farmers

In Senegal, by raising the awareness of communities about climate impacts on the environment, biodiversity and livelihoods, helped a CGIAR programme provide the practical input to make adjustments to natural resource management and livelihood planning. Small-scale farmers that do not receive adequate information and capacity building are often caught unprepared when required to respond to climate variability. This leads to cycles of low output resulting in low income. The income disparity and inequality between local farmers and other citizens can fuel social envy and generate potential sources of conflict. Extreme drought events that lead to crop failure or livestock death accelerate competition over the same scarce resources and increase, for example, territorial tensions over pasture and surface and underground water resources. This creates a fruitful environment for extremist groups to recruit fighters by offering cash and other benefits to individuals trapped in poverty and lacking alternative sources of livelihoods. As of August 2015, seasonal forecasts are transmitted nationwide through 102 rural community radio stations and SMS (the best means available for the region), potentially reaching 7.4 million rural people across Senegal. Climate information services (CIS) in Senegal are now considered an agricultural input just like seeds, fertilizers and equipment, which are the basis of production (Gumucio, Hansen and Rose, 2019). An impact assessment study revealed that the use of CIS in Senegal led to 10–25 percent increases in household income and reduced inequality and potential social conflict (Chiputwa et al., 2020)

Mongolia

©UN-REDD Programme Image Bank

Cox's Bazar, Bangladesh

©UN Women/Allison Joyce

Way forward

This discussion paper has highlighted examples from case studies on how addressing climate change and conflict in dryland ecosystems can contribute to an HDP nexus approach. These examples are displayed in an interactive map[4], illustrating the convergence of climate impacts, conflict and food and nutrition insecurity. While the case studies have illustrated how useful this type of approach can be in addressing and mitigating climate and conflict impacts, and enabling climate change adaptation, more data on the effects on food and nutrition security and environmental sustainability, as well as lasting influences on local peace, are required more broadly to clearly indicate best practice for decision-makers.

Validation of the key themes identified should be explored further through more fieldwork and a wider assessment of case studies carried out to identify whether these are the core themes for decision-makers to focus on in applying a triple nexus approach in dryland ecosystems or whether there are also others that deserve priority attention. FAO, CGIAR and CARE will explore collaboration with think-tanks and local organisations working on related issues to gather additional evidence and test the theories and themes outlined in this paper.

As of July 2021, there are a number of game-changing propositions, as included in the Coalition on Conflict and Hunger/Humanitarian–Development–Peace Nexus Solutions Cluster for putting forward solutions designed to create the conditions and structures necessary for a comprehensive and inclusive approach to food systems resilience beyond 2030 (UN Food Systems Summit, 2021).

Similarly, there are various initiatives beginning as part of the UN Decade on Ecosystem Restoration, which FAO, CGIAR and CARE will aim to coordinate with in disseminating the lessons shared in this paper, while identifying further opportunities to scale up their contributions.

The UN Decade on Ecosystem Restoration as well as the UN Food Systems Summit provide an opportunity to draw global attention on the linkages between climate, conflict and natural resource management and how the HDP nexus approach can contribute to building climate resilience and achieving lasting food and nutrition security, as well as environmental sustainability, for currently up to 3.8 billion people across the fragile drylands of the world.

[4] http://www.fao.org/dryland-forestry/en/

South Sudan

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